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ABSTRACT

A locus of control measure was administered to 431 lower and middle class children in grades one, two, four and six. Subjects did not differ significantly from each other on locus of control in grades one and two, but by fourth and sixth grades the differences had reached significance. Correlations between locus of control and achievement were generally positive for both lower and middle class children. Results were interpreted in terms of the social control function served by the public schools. (Author)

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Locus and Control and Achievement in[1] Middle Class and Lower Class Children

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The task of providing equal and adequate educational opportunity to all children, regardless of race or social class, is a formidable one, and one in which the school has not been notably successful (Coleman, Campbell, Hobson, McPortland, and Mood, 1966). Lower class and black children have consistently been found to show poorer academic achievement than their middle class and white peers (Coleman, et al., 1966; Deutsch, 1963). In fact, disadvantaged children perform even more poorly as they progress through school--that is, differences in achievement between middle class and lower class children became greater as they spend more years in school (Jensen, 1966). This progressive achievement decrement suggests that the habits, attitudes, motives, and skills that lower class children possess when they enter school are relatively more adequate for enabling the child to cope with school tasks than are the habits, attitudes, motives, and skills that the children possess after several years' exposure to school. Lower class children are better off, relative to middle class children, in first grade than they are in sixth grade. While there appears to be little doubt that important differences exist between the two groups at the beginning of first grade, it is possible that the school experience itself is a factor in accounting for the attenuation in relative performance of so many lower class children. Lower class children are not prepared to do

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[1]This study was conducted as part of the author's doctoral dissertation at Indiana University. Grateful appreciation is extended to Dr. Sam Guskin, and Dr. Howard Spicker for their assistance with the study. An earlier version of this paper was presented at the American Educational Research Association Convention, Minneapolis, 1970.

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as well in our society as are middle class children; the question is - are the schools effective in equalizing the opportunities of the classes?

There is evidence that school surroundings (physical facilities, instructional materials, sociocultural characteristics of teachers and pupils) differ systematically for children of varying socioeconomic and ethnic backgrounds (Coleman, et al., 1966; Sexton, 1961). In addition, the actual content of instruction has been shown to vary significantly by socioeconomic level of the community in which a school is located. For example, in a study reported by Litt (1963), a content analysis of civics texts used in junior high schools of varying socioeconomic status revealed that texts in the higher social class schools stressed political process as active occurrences involving confrontations between political actors and the use of political power; texts in the lower class schools stressed passive obedience to laws and represented political process as "the workings of an invisible hand of governmental institutions (Litt, 1963, p. 72)."

Litt's study suggests that one of the mechanisms through which the schools serve a social control function for a society is through the cultivation, in lower class children, of a world view and self-concept in which the subject sees himself as a passive agent, unable to effect change in the events that govern his life, and unable to affect a contingency between events in his own life space and the rewards available in the social system. This belief in ability to control one's destiny has been studied and described as alienation, powerlessness, or locus of control; this latter construct has been successfully measured and used to predict behavior in a variety of situations (Lefcourt, 1966; Rotter, 1966). If one can generalize from Litt's findings, then lower class

children are being trained in and rewarded for adopting a life style that is ultimately self-defeating.

A number of investigators (Butterfield, 1964; Coleman et al., 1966; Crandall, Katkovsky, and Crandall, 1965; and Crandall, Katkovsky, and Preston, 1962) have reported that locus of control relates to the school achievement of children. Of particular interest are the findings of Butterfield (1964) and Coleman, et al., (1966) that this relationship varies according to the social class of the subjects. Butterfield reported a negative correlation between locus of control and achievement in a lower social class sample of retardates; Coleman found that locus of control predicted achievement in lower class, but not in middle class high school students. Unfortunately, Butterfield's results are unclear due to the use of small, poorly described samples. Coleman, et al.'s data on this variable are limited to ninth and twelfth graders.

From Litt's (1963) study, it would appear that locus of control and related beliefs about one's effectiveness in coping with the world around one, are differentially cultivated and developed by the schools in lower and middle class children. It would seem to be a matter of some interest, therefore, to investigate children's beliefs about their ability to control their environment when they first enter school, and periodically thereafter. An interaction between lower and middle class subjects being insignificant in the early school grades, but becoming significant as the children progress through school. Also of interest is the question of the relationship between locus of control and school achievement in young children of the two social classes. It was hypothesized that a positive correlation between these variables in middle class children would be obtained but that this correlation would be negative for

lower class children.

METHOD

The sample consisted of sixteen first, second, fourth, and sixth grade classes randomly drawn from a list of classes in a Midwestern community school system of approximately 20,000 children, yielding a sample with a total N of 431 (109 first grade children, 107 second grade children, 107 fourth grade children, and 108 sixth grade children). Relevant sample characteristics are reported in Table 1.

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Insert Table 1 about here
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The Bialer Children's Locus of Control scale (Bialer, 1961), was administered to all subjects. Socioeconomic status was determined by the use of Duncan's (1961) Socioeconomic Index for Occupations, with index ratings of 38.5 or above classifying a subject as middle class, and index rating of below 38.5 classifying a subject as lower class (see Duncan, 1961). Academic performance was determined by children's scores on the Iowa Tests of Basic Skills or Metropolitan Achievement Tests. IQ scores (Kuhlmann-Anderson) and reading readiness scores (Metropolitan) obtained from the subjects when they were in grades two and four, and in grade one, respectively, were obtained from the children's cumulative folders. Achievement and IQ scores were not available for children in garde one.

All data were analyzed on Control Data 3400-3600 computers employing programs BMD03D and BMD05V (Health Sciences Computing Facility, UCLA).

Results

It was predicted that no differences in locus of control would be found

between lower and middle class children in first and second grades, but that by sixth grade middle class children would be more internally controlled than lower class children.

These hypotheses were tested in a 4 x 2 (grade by social class) analysis of variance design. The results of this analysis are presented in Table 2.

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Insert Table 2 about here
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Table 2 indicates main effects for grade and for social class, as well as a significant interaction between grade and social class. To determine the significance of individual differences in Bialer score means between the two social classes separately by grade, t-tests were employed (Table 3).

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Insert Table 3 about here
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As indicated in Table 3, the differences in Bialer scores between lower and middle class children are, as predicted, not significant at the first and second grade levels, but these differences are significant at the .05 level in fourth grade, and at the .01 level in sixth grade.

Another way of looking at the same data is to note that the mean Bialer scale scores increase from 12.70 to 13.98 for lower class children from first grade to sixth grade respectively (Table 3, Figure 1). The mean Bialer scores for middle class children increased from 13.00 for the first grade to 16.23 for the sixth grade. Studentized Ranges for Duncan's New Multiple Range Test (Edwards, 1968) were used to determine the significance of grade-to-grade changes within each social class. An examination of these post hoc analyses (Table 4) indicates that differences in locus of control between first and sixth grades are not significant for lower class children, but are significant for middle class children.

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Insert Table 4 about here
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Insert Figure 1 about here
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Since the lower class sample had a lower mean IQ than did the middle class sample (Table 1), and since it is known that IQ correlates positively with locus of control (Bialer, 1961; in this study correlations averaged .223 for the lower class and .146 for the middle class) a more stringent test of the hypothesis required the employment of an analysis of covariance design with IQ the covariate. Results of this analysis are presented in Table 5.

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Insert Table 5 about here
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An examination of Table 5 makes it clear that when the differences in IQ of middle class and lower class children are controlled for, a main effect of social class on Bialer scores is no longer observed. This indicates that overall differences in Bialer scores between the two social classes can be accounted for by the differences in IQ scores of the two groups. A main effect of grade level on Bialer score remains significant when IQ is employed as a covariate. Furthermore, the hypothesized interaction between grade and social class continues to be obtained, even when the effects of IQ are controlled for. This indicates that IQ differences do not account for the findings reported in Table 2. (First grade children were not included in this analysis due to the fact that no IQ data were available for this group.)

Correlations between locus of control and two achievement measures--first grade reading readiness raw scores and current standardized achievement test

scores--are presented in Table 6 and 7. Results indicate that correlations between these two variables are generally positive for both groups of children, thus yielding only partial support for the second hypothesis, although the magnitude of the correlations for middle class children are consistently greater than those of lower class children.

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Insert Tables 6 and 7 about here
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(It is to be noted that the correlations presented in Table 6 represent the relationship between locus of control at present, and reading readiness raw scores that were obtained when the subjects were in first grade. The fact that reading readiness is able to predict locus of control two, four, or six years later is itself remarkable.)

Discussion

Lower and middle class children enter school not measurably different from each other in locus of control, but by the time they reach the sixth grade, they are significantly different from each other on this characteristic. It is probable that this change between grades one and six is associated with some aspect of the school experience. If differences in the social class of the child's family were completely or even primarily responsible for differences in locus of control between lower and middle class children such family differences should have had a maximum impact on the child before he starts school. However, this study indicates that such differences are not present when the child enters school; they become more evident as the child progresses through school. The school experience itself appears to have differential effects--facilitative versus inhibitive--for the development of internal control, depending on the child's

social class. This finding is contrary to Crandall et al., (1965) who state that schooling provides a levelling effect on middle class and lower class children's beliefs of control. If the schools encourage children of all social classes to achieve an internal orientation, one would expect social class differences to be significant at the lower grade levels and then lose significance as all children respond to the encouragement toward internal control. The exact opposite was found in this study.

This interpretation nicely parallels that of Kohn, who, in his recent book, Class and Conformity (1969), discusses the impact of class, education, and occupation on values. He states that "the essence of higher class position is the belief that one's decisions and actions can be consequential; the essence of lower class position is the belief that one is at the mercy of forces and people beyond one's control, often, beyond one's understanding (p. 198)." Clearly, Kohl is talking about a belief system very close to that of locus of control. Kohl argues that education and values interact; but the predominant direction of effect is from education to values. This is so, he believes, because educational opportunities and the resources to take advantage of those opportunities are not equally distributed, and because children of the varying socioeconomic classes are not equally treated in the schools. Education is primarily a determinant, rather than a consequence of self-directed values and orientation (p. 191).

From Figure 1 it can be seen that while middle class children become significantly more internally controlled from grades one to six, lower class children remain at relatively the same level of external control from grades one to six. One interpretation for this would be that since the lower class sample had a

lower IQ, and since locus of control increases as MA increases (Bialer, 1961), this failure to become internally controlled simply reflects the slower increase in MA of these lower IQ children. This interpretation is unacceptable, however, in view of the fact that when Grade two IQ was used as a convariate in the analyses of the data, similar findings continue to be obtained.

What factors, then, can account for this widening of the gap between international-external scores of lower and middle class children? It had been hypothesized that teachers discourage the development of internality in lower class children by rewarding externality and conformity in their school performance--to be evidenced by negative correlations between locus of control and achievement. This hypothesized inverse relationship between internal locus of control and academic achievement in lower class children is, however, not supported in this study.

One explanation of these findings is that the demands of the school situation are such that for middle class children there is a relative concurrence (after first grade) between the kind of strategy required for achievement and the child's belief in his ability to effectively employ that strategy to bring about the desired effect. Since middle class children by and large are better achievers than lower class children, it can be stated that they do also in fact employ strategies that are effective for conventional school achievement.

Table 6 indicates the puzzling finding that for middle class children, reading readiness correlates <u>negatively</u> ($r = -.308$) with Bialer locus of control scores in the first grade, but <u>positively</u> in the second grade and therafter. No entirely adequate explanation for this finding readily presents itself. The data indicate that high achieving first grade middle class children tend to be externally controlled. One possibility is that these high achieving children rapidly become

internally controlled, so that by second grade their first grade reading readiness scores correlate positively with internal locus of control. By fourth and sixth grades these correlations have reached the magnitude of .522 and .388, respectively. One interpretation of this profile is that an external mode of control is an effective strategy for achievement at the beginning of first grade, but that as the nature of the school task changes from teacher-directed activities (such as those common in first grade) to activities that call for greater inner direction (habits of perseverance and study skills) the child changes his mode of problem-solving. The successful middle-class achiever is flexible enough to see at what point reliance on others is less efficacious than reliance on himself. Perhaps also, the feelings of success presumably accompanying the high reading readiness achievement facilitate a belief in the child of being able to master his environment.

An alternative interpretation is that high internalizing first graders do not adequately copy the models of the teacher, so they are low on achievement, but when the tasks require more self-initiation (as in second grade and therafter), their achievement as measured by standardized tests, improves. The ability to understand instructions and wording on the Bialer scale may also be a factor in the developmental changes in scores for both lower and middle class children.

The correlations between locus of control and achievement in lower class children are inconsistent and unstable. This suggests that the relationship may be distorted by several conflicting variables. While a belief in one's ability to bring about a certain result (internal control) would logically seem to facilitate the bringing about of that result, it appears that these two factors are only sporadically related in lower class children.

It is suggested that certain aspects of the school situation may be responsible--such factors as excessive teacher insistence on conformity and dependence upon sources outside of the self, inadequate opportunity for taking responsibility and actually "controlling" one's environment, or teacher expectations for low achievement regardless of internal or external control if one happens to be perceived as lower class. Any one or all of these factors might put the lower class child in a vortex of conflicting beliefs and expectations. Thus, on the one hand, as his physical and mental capacities improve, he becomes in fact more capable of controlling his environment. It is reasonable that this objective fact should lead to greater belief in internal control (Bialer, 1961), and thus to the positive correlation between locus of control and school achievement. On the other hand, the indicated school pressures on the lower class child may at times be great enough to effectively diminish or negate this relationship. The child, caught between the two, is unable to stabilize and integrate his beliefs into an efficient strategy for dealing with school tasks. This is reflected in the inconsistent pattern of development of locus of control in lower class children (Figure 1) and also in the fact that lower class children continue to achieve at lower levels than do middle class children.

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Table 1

Sample Characteristics

		CA		IQ Grade 2		IQ Grade 4		Duncan SES	
	N	$\bar{X}$	s.d.	$\bar{X}$	s.d.	$\bar{X}$	s.d.	$\bar{X}$	s.d.
Male	232	9.02	1.98	103.84	13.34	99.83	15.85	35.81	23.66
Female	199	9.23	2.04	106.82	13.65	102.81	16.13	35.85	25.27
White	374	9.01	2.01	107.02	13.11	103.18	15.27	38.69	24.28
Negro	57	9.82	1.81	94.66	11.32	88.44	15.37	17.03	15.02
Grade 1	109	6.90	.50	*	*	*	*	35.24	22.38
Grade 2	107	7.87	.55	106.87	15.05	*	*	37.54	26.14
Grade 4	107	9.86	.57	107.20	14.38	98.81	16.06	34.93	23.58
Grade 6	108	11.91	.65	101.21	9.12	97.61	15.55	35.61	25.55
Lower Class	258	9.10	2.05	100.30	12.05	95.29	13.80	18.25	9.86
Middle Class	173	9.13	1.94	111.69	12.68	108.54	15.63	62.04	13.87
Total	431	9.11	2.00	105.31	13.55	101.25	16.05	35.83	24.39

* no data available

Table 2

Analysis of Variance for Grade by Social Class on Bialer Total Scores

Source	df	SS	MS	F
Grade	3	287.084	95.695	14.859**
Social Class	1	96.330	96.330	14.958**
Grade by Social Class	3	60.412	20.137	3.127*[1]
Residual	384	2473.003	6.440	
Total	391	2916.829		

*p < .05; **p < .01

[1]Accounting for approximately 2.4% of the total variance (Cohen, 1965, p. 103).

Table 3

Bialer Locus of Control Mean Scores by Grade and Social Class

	Lower Class	Middle Class	t MC-LC
Grade 1	12.70 (60)[a]	13.00 (34)	t=.52
Grade 2	13.35 (57)	13.67 (45)	t=.64
Grade 4	12.54 (57)	13.71 (42)	t=2.21*
Grade 6	13.98 (53)	16.23 (44)	t=4.25**

* p<.05; **p<.01. (Two-tailed tests of significance are employed unless otherwise indicated.)

[a]Numbers in parentheses indicate the observed frequencies, N.

Table 4

Differences between Mean Bialer Scores between Grade Levels by Social Class

	1-2	1-4	1-6	2-4	2-6	4-6
Lower Class	.65	-.16	1.28	.81	.63	1.44
Middle Class	.67	.71	3.23*	.04	2.56*	2.52*

*p< .05; **p< .01; Duncan Studentized Ranges

Table 5

Analysis of Covariance for Grade by Social Class on Bialer Total Scores
Covariate: Grade 2 IQ
(Grades two, four, and six only)

Source	df	SS	MS	F
Grade	2	267.171	133.586	21.526**
Social Class	1	14.691	14.691	2.367
Grade by Social Class	2	38.462	19.231	3.099*[1]
Residual	250	1551.431	6.206	
Total	255	1871.756		

*p< .05; **p< .01;
[1]Accounting for approximately 2.39% of the total variance (Cohen, 1965, p. 103).

Table 6

Correlations between Bialer Locus of Control Scores and First Grade Reading Readiness Raw Scores by Grade and Social Class

	Lower Class	Middle Class	$t=\frac{r_{MC}-r_{LC}}{}$
Grade 1	.128 (56)	-.308 (31)	t=-1.95
Grade 2	.134 (32)	.296 (40)	t=.72
Grade 4	.230 (41)	.522** (27)	t=1.32
Grade 6	.144 (34)	.388* (35)	t=1.03

*p< .05; **r< .01

Table 7

Correlations between Bialer Locus of Control Scores and Latest Standardized Achievement Test Scores by Grade and Social Class

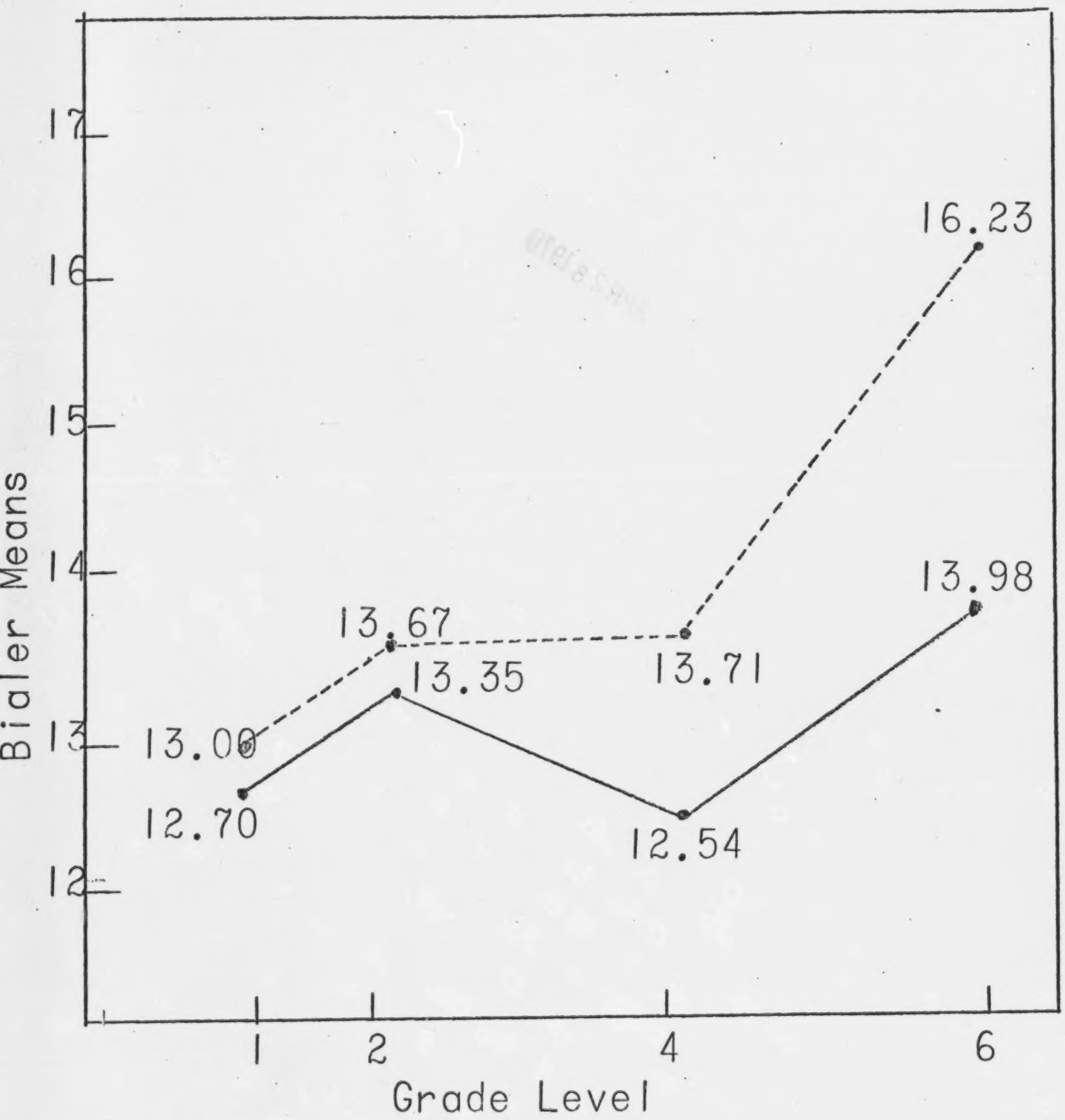
	Lower Class	Middle Class	t $r_{MC} - r_{LC}$
Grade 2	-.041 (57)	.357* (45)	t=2.03*
Grade 4	.355** (51)	.494** (41)	t=.79
Grade 6	.324* (51)	.480** (44)	t=.88

*p<.05; **p<.01

Figure Caption

Figure 1

Mean Bialer Scores by Grade and social Class



Middle Class .-------.

Lower Class ·_____·